Council on Postsecondary Education
November 7, 2013

Improving Educator Quality (IEQ) State Grant Program

ACTION: The staff recommends that the Council on Postsecondary Education award federal *No Child Left Behind*, Title II, Part A, funds in the amount of $839,000 for January 1, 2014–June 30, 2015, to support seven projects.

1. *Success in Algebra: Improving Special Education Teaching Practice* (University of Kentucky): $120,000—Year 2

2. *Collaborative for Inquiry-Based Instruction* (Northern Kentucky University): $120,000—Year 2

3. *Algebraic Dynamic Duo: Integrating Hands-On Learning and Problem Solving to Increase Student Achievement* (Morehead State University): $120,000—Year 2

4. *FLIP: Using Video Podcasts for Mathematics Instruction and Intervention* (Northern Kentucky University): $120,000—Year 2

5. *Integrating Engineering in the Sciences (IES)* (University of Kentucky): $130,000

6. *Project-Based Investigations on Improving Water Quality in the Kentucky River Watershed* (University of Kentucky): $130,000

7. *Enriching Science Learning through Simulations and Interdisciplinary Problem-Solving* (Murray State University): $99,000

The Improving Educator Quality State Grant Program awards grants to partnerships that deliver research-based professional development programs to P-12 teachers. To be eligible, a partnership must include a postsecondary institution's school of arts and sciences and its teacher preparation program, as well as at least one high-need local school district. The program enables states to fund training for teachers and administrators in any core academic subject.

Senate Bill 1 (2009 Regular Session) was signed by the Governor on March 26, 2009. The bill calls upon the Kentucky Department of Education, in collaboration with the Kentucky Council on Postsecondary Education, to plan and implement a comprehensive process for revising academic content standards. Working collaboratively, the agencies have developed a comprehensive process to revise standards in all content areas. A comprehensive process

was also developed to create a unified strategy to reduce college remediation rates and increase graduation rates of postsecondary students with developmental education needs. Kentucky's participation in the Common Core Standards initiative for English/language arts and mathematics ensures that the tenets of Senate Bill 1 (codified as KRS 158:6451) are met. The Common Core State Standards Initiative is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO).

The Kentucky Department of Education, the Education Professional Standards Board, and the Council on Postsecondary Education jointly adopted these standards on February 10, 2010.

The standards are aligned with college and work expectations, include rigorous content and application of knowledge through high-order skills, build upon strengths and lessons of current state standards, are internationally-benchmarked so that all students are prepared to succeed in the global economy and society, and are evidence and/or research-based.

The Kentucky Board of Education adopted the Next Generation Science Standards (NGSS) on August 8, 2013. The Next Generation Science Standards will lay out the core ideas and practices in science that students should master in preparation for college and careers.

To that end, the Council is focusing Year 12 of the Improving Educator Quality State Grant Program on projects that fully integrate the new Common Core Standards and Next Generation Science Standards and related assessments in a way that assists teachers in providing intervention in content areas for students in need of accelerated learning.

External reviewers and content-area specialists reviewed twelve grant proposals and made recommendations to the Council staff. Seven proposals were selected. Brief descriptions of these projects follow.

1. University of Kentucky: $120,000—Year 2
   Success in Algebra: Improving Special Education Teaching Practice
   Kimberly Zeidler-Watters, principal investigator

   The University of Kentucky will provide content and strategies for special education teachers to facilitate and develop effective classroom experiences for their students. The content focus will be on developing a deeper understanding for the teacher participants on number concepts as they relate to success in algebra. The interventions are necessary for special needs students who have gaps in learning so they are prepared for and can be successful in Algebra I courses. The proposal will target 20 special education middle and high school mathematics teachers.

2. Northern Kentucky University: $120,000—Year 2
Collaborative for Inquiry-Based Instruction
Jennifer Stansbury Koening and Susan Cook, principal investigators

Northern Kentucky University, in collaboration with Thomas More College, will expand support for the professional learning community of Instructional Coaches established by the Northern Kentucky Partnership Academy. CIBI will promote best practices of inquiry-based and project-based instructional strategies during workshops convened by postsecondary experts of teacher education, mathematics, sciences, and literacy. Participants will engage in experiential instruction that builds their capacity to effectively coach teachers to implement inquiry-based and project-based instructional strategies to accelerate student learning.

3. Morehead State University: $120,000—Year 2
Algebraic Dynamic Duo: Integrating Hands-On Learning and Problem Solving to Increase Student Achievement
Krista Barton, principal investigator

Morehead State University will engage 40 middle and high school math and math-collaboration special education teachers. The project's objectives are (1) identify students in need of accelerated learning through rigorous and scientifically researched assessment practices to make appropriate content-based interventions for assistance in algebra instruction, especially students beyond 8th grade still struggling with algebra concepts, (2) implement instructional practices, informed by scientifically based research, for teaching algebra with a focus on depth of knowledge in algebraic concepts as defined by Common Core Standards, (3) fully integrate professional development that assists teachers in analyzing ACT College Readiness Assessment (Explore, Plan, and ACT) scores to inform instruction and strategies to assist students' achievement on these tests, and (4) empower teachers through self-reflection and analysis in the creation of individual action plans.

4. Northern Kentucky University: $120,000—Year 2
FLIP: Using Video Podcasts for Mathematics Instruction and Intervention
Theodore Hodgson and Renee Campoy, principal investigators

Northern Kentucky University, in collaboration with Murray State University and the Kentucky Center for Mathematics will provide mathematics teachers the opportunity to pilot a flipped instructional model. With the guidance of university specialists in mathematics education, teacher education, and technology, 30 teachers in grades 7-12 will "flip" the traditional instructional sequence using content-based video podcasts. In the flipped classroom, students view teacher-created video podcasts of the lesson as homework. Time in the classroom is then devoted to clarifying discussions, computational and conceptual practices, and enrichment activities. Research on this emerging model indicates that students are more actively engaged in the classroom, achieve and succeed at higher levels, and assume greater responsibility for their learning.

5. University of Kentucky: $130,000
   Integrating Engineering in the Sciences (IES)
   Kimberly Zeidler-Watters, principal investigator

   Through a broad partnership facilitated by the Partnership Institute for Math and Science Education Reform (PIMSER), comprised of high school science teacher teams, science educators, and scientists, the project will work to develop, pilot, and revise high school instructional units of study. With the addition of Global Climate and several human health-related core ideas in the NGSS, high school science programs have a high need for assistance with developing units that address these concepts and integrate engineering. Participating in IES is designed to move science teachers from test preparation to designing classroom experiences that genuinely prepare students to be college and career ready.

6. University of Kentucky: $130,000
   Project-Based Investigations on Improving Water Quality in the Kentucky River Watershed
   Rebecca McNall Krall, principal investigator

   This professional development project aims to improve 27 middle school teachers' abilities to develop and implement engaging project-based learning (PBL) units relating to the Kentucky River Watershed. The central goal of the project is to improve middle school teachers' competence and confidence in teaching and applying Kentucky Core Academic Standards and Next Generation Science Standards in authentic STEM contexts that engage students in doing science and applying knowledge in authentic contexts.

7. Murray State University: $99,000
   Enriching Science Learning through Simulations and Interdisciplinary Problem-Solving
   Yuejin Xu, principal investigator

   Murray State University, in collaboration with Madisonville Community College, the University of Kentucky, Kentucky Academy of Technology Education, and six school districts, proposes to offer professional development helping science and mathematics teachers meet the requirements of the Next Generation Science Standards and Kentucky Core Academic Standards for Mathematics and learn to effectively use simulations and interdisciplinary problem-solving for students in need of accelerated learning. Through intensive summer training and online mentoring throughout the school year, participating teachers will gain insight into the new standards for science and mathematics, and explore effective strategies for engaging students with science simulations and interdisciplinary problem-solving activities.

Staff preparation by Kathy Garrett